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concludes that it would have been obvious to modify the adhesive of Gupta by adding a WINGTACK composition to enhance the tack of the resultant composition and improve the flexibility as well as low temperature properties of the adhesive.

The present invention includes an adhesive comprising polyethylene; a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate; and a resin derived from at least one unsaturated C5 hydrocarbon monomer. The present invention also includes a cable comprising a metal conductor; a polymeric jacket surrounding the metal conductor; and an adhesive bonding the outer conductor and the polymer jacket, the adhesive comprising polyethylene; a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate; and a resin derived from at least one unsaturated C5 hydrocarbon monomer.

The adhesive of the invention when used to bond a cable jacket to a conductor provides a consistent peel strength and produces a residue on the outer conductor that can be easily removed when the jacket is separated from the outer conductor for connectorization purposes. It was unexpected that the combination of a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate and a resin derived from at least one unsaturated C5 hydrocarbon monomer could be combined to provide these properties.

In particular, as set forth in the specification at page 2, line 16 to page 3, line 2:

It has been unexpectedly discovered that the adhesive composition of the invention produces a bond between a metal surface and a polymeric surface that not only has excellent bond strength but that also produces a residue that can be easily removed when the metal surface and the polymeric surface are separated. In particular, as discussed above, one problem with the LDPE/EAA copolymer adhesives traditionally used with coaxial cables is that the EAA copolymer produces too aggressive a bond and the metal and polymer interfaces bonded with the adhesive when separated produce a residue on the metal surface that is difficult to remove. It would be expected that this problem would be exacerbated by the addition of a tackifying resin that increases the aggressiveness or tackiness of the adhesive. However, it has been unexpectedly discovered that the addition of a tackifying resin derived from unsaturated C5 hydrocarbon monomers to the adhesive composition provides an adhesive that leaves a residue that can be easily

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removed from the metal surface. Furthermore, coaxial cables using the adhesive composition of the invention between the outer conductor and protective jacket have increased peel strengths and better bending properties than cables using conventional adhesive compositions. Moreover, the adhesive of the invention provides the increased peel strength over a wide range of temperatures (e.g. -20°F to 160°F).

Gupta describes a cable having a corrosion inhibiting adhesive. The adhesive comprises a polyfunctional silane compound and can include an extender or carrier such as polyethylene and an adhesive promoting additive such as ethylene acrylic acid.

WINGTACK describes the use of Wingtack® resins based on C5 hydrocarbon monomers as tackifying or modifying resins.

Gupta and WINGTACK both fail to teach or suggest that the combination of a copolymer derived from ethylene and at least one monomer selected from the group consisting of acrylic acid, methacrylic acid, methyl acrylate and ethyl acrylate and a resin derived from at least one unsaturated C5 hydrocarbon monomer could be combined to provide the unexpected results set forth in the present application. As discussed above, it was not expected that a tackifying adhesive that increases the aggressiveness or tackiness of an adhesive composition such as a C5 hydrocarbon resin could be combined with an ethylene/ethylene copolymer adhesive that was already too aggressive to produce an adhesive that provides a residue that can easily be removed from the conductor surface as is desired in the cable art. Because Gupta and WINGTACK do not teach or suggest the unexpected results exhibited by the claimed adhesive combination, Applicant respectfully submits that the present claims are not obvious in view of Gupta and WINGTACK. Accordingly, Applicant respectfully requests withdrawal of the rejection based on these references.

For the reasons provided above, Applicant respectfully submits that all the claims are in condition for allowance. Accordingly, Applicant respectfully requests that all rejections be withdrawn and that a Notice of Allowance be issued in due course. If any minor informalities need to be addressed, the Examiner is directed to contact the undersigned attorney by telephone to facilitate prosecution of this case.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those, which may otherwise be provided for in documents accompanying this paper.

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However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



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March 17, 2003
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